UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/591,524	09/01/2006	Kei Tashiro	04853.0136	2979

22852 7590 02/18/2010

FINNEGAN, HENDERSON, FARABOW, GARRETT & DUNNER LLP
901 NEW YORK AVENUE, NW
WASHINGTON, DC 20001-4413

EXAMINER	
HEINCER, LIAM J	

ART UNIT	PAPER NUMBER
1796	

MAIL DATE	DELIVERY MODE
02/18/2010	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/591,524	TASHIRO ET AL.	
	Examiner	Art Unit	
	Liam J. Heincer	1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *30 October 2009*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-17* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-7* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Saito et al. (Purification of Natural Rubber with Urea), presented in applicant's IDS (9/1/06), in view of Trautman (US Pat. 5,777,004) as evidenced by S. Kawahara et al. (Polym. Adv. Technol. 2004; 15: 181-184).

Considering Claims 1 and 4-7: Saito et al. teaches a method of denaturing natural rubber latex (page 1) comprising adding a urea denaturating agent and a surfactant to a natural rubber latex (page 1); and centrifuging the mixture at 10,000 G (page 1). Saito et al. also teaches that the mixing temperature is room temperature/between 0 and 30 degrees C.

Saito et al. doesn't teach agitating the mixture. However, Trautman teaches agitating a mixture of a natural rubber latex and a denaturing agent (5:29-35). Saito et al. and Trautman are analogous art as they are concerned with the same field of endeavor, namely denaturing natural rubber latex proteins. It would have been obvious to a person having ordinary skill in the art at the time of invention to have agitated the mixture of Saito et al. as in Trautman and the motivation to do so would have been, as Trautman suggests, to ensure complete hydrolysis of the proteins (5:29-35).

Saito et al. does not teach the mixing as occurring during the transportation through a fluid channel. However, it is obvious to transform a known batch process into a continuous process. See MPEP § 2144.04 (V). Therefore it would have been obvious to a person having ordinary skill in the art at the time of invention to have made the process of Saito et al. continuous/mix the components in a transportation channel,

and the motivation to do so would have been to make the process more efficient and cost effective.

Kawahara et al. does not teach the mixing time as being from 5 to 10 minutes. However, "where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation." *In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955). A person having ordinary skill in the art at the time of invention would have considered the mixing time to be a result effective variable, as reaction time affects cost and the amount of rubber that can be produced. It would have been obvious to a person having ordinary skill in the art at the time of invention to have optimized the mixing time through routine optimization, and the motivation to do so would have been to reduce the cost of production.

Additionally, S. Kawahara et al. teaches that urea in the presence of a surfactant (pg. 181) will reduce the nitrogen content of the rubber/sufficiently denature the proteins substantially within the first ten minutes of the incubation (pg. 182).

Considering Claim 2: Saito et al. teaches the amount of urea added as being 0.1 weight percent (page 1).

Considering Claim 3: Saito et al. teaches the amount of surfactant as being 1 weight percent (page 1).

Double Patenting

Applicant is advised that should claim 1 be found allowable, claims 6 and 7 will be objected to under 37 CFR 1.75 as being a substantial duplicate thereof. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

Response to Arguments

Applicant's arguments filed October 30, 2009 have been fully considered but they are not persuasive, because:

The applicants argument that there is no motivation to shorten the time period for the deproteinization process of Saito et al. is not persuasive. "[W]here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation." *In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955). See MPEP § 2144.05. The duration of a process is well known in the art to impact the total cost of production of a product. Further, as Saito et al. teaches that an advantage of urea is the shortened reaction time with comparison to the prior art processes, reaction time is clearly considered to be a result effective variable in the art. As such, it would have been obvious to a person having ordinary skill in the art at the time of invention to have optimized the mixing time through routine optimization, and the motivation to do so would have been to reduce the cost of production. Further, as S. Kawahara et al. teaches that urea in the presence of a surfactant (pg. 181) will reduce the nitrogen content of the rubber/sufficiently denature the proteins substantially within the first ten minutes of the incubation (pg. 182), there is a reasonable expectation that a person having ordinary skill in the art at the time of invention would have arrived at the claimed mixing time through the optimization process.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Correspondence

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Liam J. Heincer whose telephone number is 571-270-3297. The examiner can normally be reached on Monday thru Friday 7:30 to 5:00 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Eashoo can be reached on 571-272-1197. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Mark Eashoo/
Supervisory Patent Examiner, Art Unit 1796

LJH
February 3, 2010